

CITY OF LEDUC AEROHUB CORE IN EDMONTON REGION AEROTROPOLIS

DESIGN GUIDELINES

MAY 2013

pA
planningAlliance



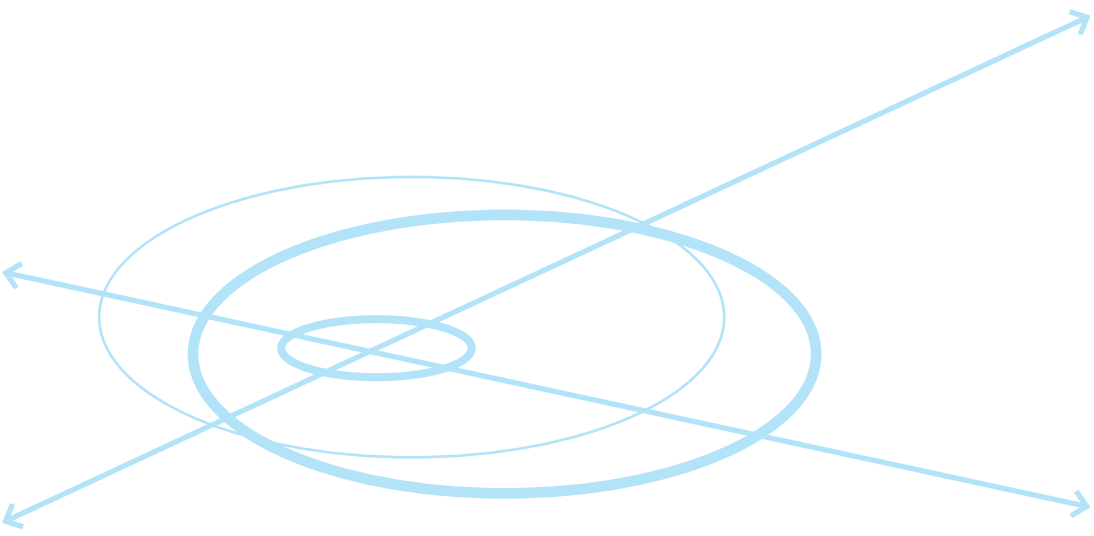
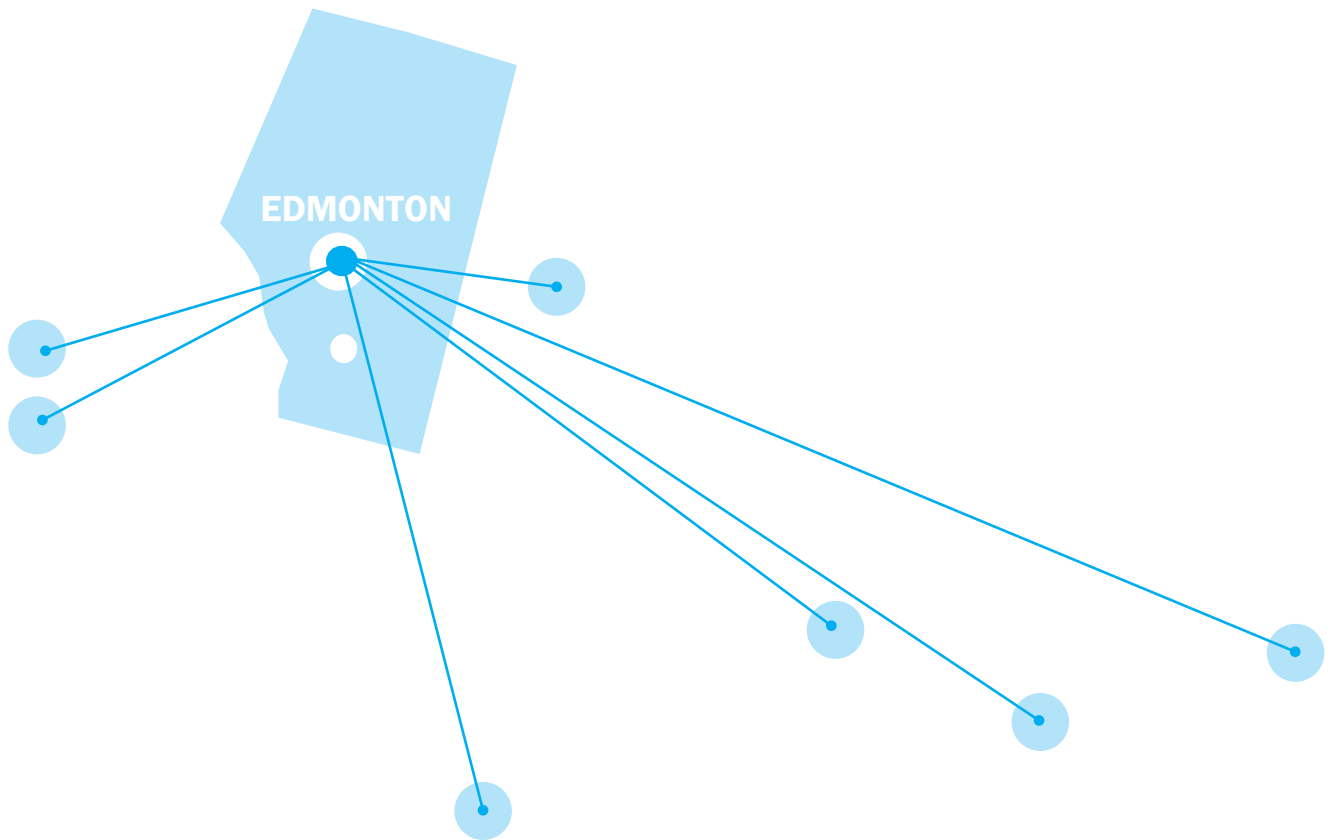




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1. PROJECT OVERVIEW

As the Edmonton International Airport (EIA) continues to grow and evolve, the City of Leduc has made it a priority to grow and evolve with it and support the Edmonton region's future growth.

The City of Leduc has a key role in future economic development within the region and is considering adopting aerotropolis development principles for a 640 acres landsite just south of the Edmonton International Airport. The adoption of these principles will allow for synergies with the existing concentration of industrial activities in the Nisku Business Park (particularly those that are aviation or air-truck related), as well as benefiting from close proximity to the Edmonton International Airport, and a connection to the regional road hub (Port Alberta). The proximity of the study area to different modes of transport is advantageous for rapid connectivity to regional, national and global markets.

The main purpose of this document is to provide a set of design guidelines for future development of the subject lands and establish this area as a focal point of the future aerotropolis within the City of Leduc.

The guidelines were developed through a joint design charrette between a variety of local stakeholders, the City of Leduc staff and the City Region Studies Centre staff. planningAlliance was commissioned to facilitate the design charrette and prepare the design guidelines document.

Aerotropolis programming can generally be categorized according to three broad areas of focus:

‘PEOPLE’ CENTRES

These centres focus primarily on on-site or proximate people-related services that aim to enhance the passenger and community experience through integrated transportation, hotel, conference, offices, and entertainment/recreation activities. Examples of these airports would include Frankfurt International, Germany and and Kuala Lumpur International, Malaysia.

LOGISTICS’ CENTRES

These centres focus primarily on logistics and complementary industrial activities through integration of foreign trade zones, intermodal transportation or derived regional gateway initiatives. These airports are predominately cargo-based and include, for example, Memphis (FedEx), Louisville (UPS) and Rickenbacker, Ohio.

‘INTEGRATED’ CENTRES

These centres merge key aspects of ‘people’ and ‘logistics’ and involve even broader zones of influence. Singapore Changi, Hong Kong and Amsterdam-Schiphol are prime examples of a fully integrated Aerotropolis. Note, that airports characterized as ‘People’ Centres can also evolve into ‘Integrated’ Centres as growth is leveraged to create synergies for broader international trade through the airport.



Leduc Aerotropolis lands located south of Edmonton International Airport

1.1. WHAT IS AN AEROTROPOLIS?

An aerotropolis is a region that develops and grows with t an airport and related activities as central economic growth drivers and the hub of economic activity. The region as a whole may gain a competitive advantage over other business centres by utilizing the mutual synergies between various business types, proximity to transportation infrastructure and with each other.

At a micro scale, a typical aerotropolis may include separate zones for office business parks, hotels, logistics parks, industrial parks, e-commerce centres, retail centres, distribution centres, information technology complexes and wholesale merchandise marts that may benefit by locating themselves around an airport and along the transportation corridors surrounding them. Additional regional amenities such as convention centres, and entertainment complexes can add value to any typical aerotropolis development. The business core may be surrounded by mixed-use residential areas. A multi-modal transportation hub provides transit connectivity for regional population to key areas of the aerotropolis.



Source: This diagram and the above explanation is based on aerotropolis concepts explained on <http://www.aerotropolis.com> website.

1.2. REGIONAL CONTEXT

This document highlights the City of Leduc’s potential contribution to an aerotropolis in the Edmonton Region. However, the concept of an aerotropolis is considered to be of regional concern. Communities along, and, connected to major transportation routes from the South of the Edmonton International Airport to the North of the City of Edmonton are well positioned for long term benefits from synergistic development of airport related businesses and infrastructure.

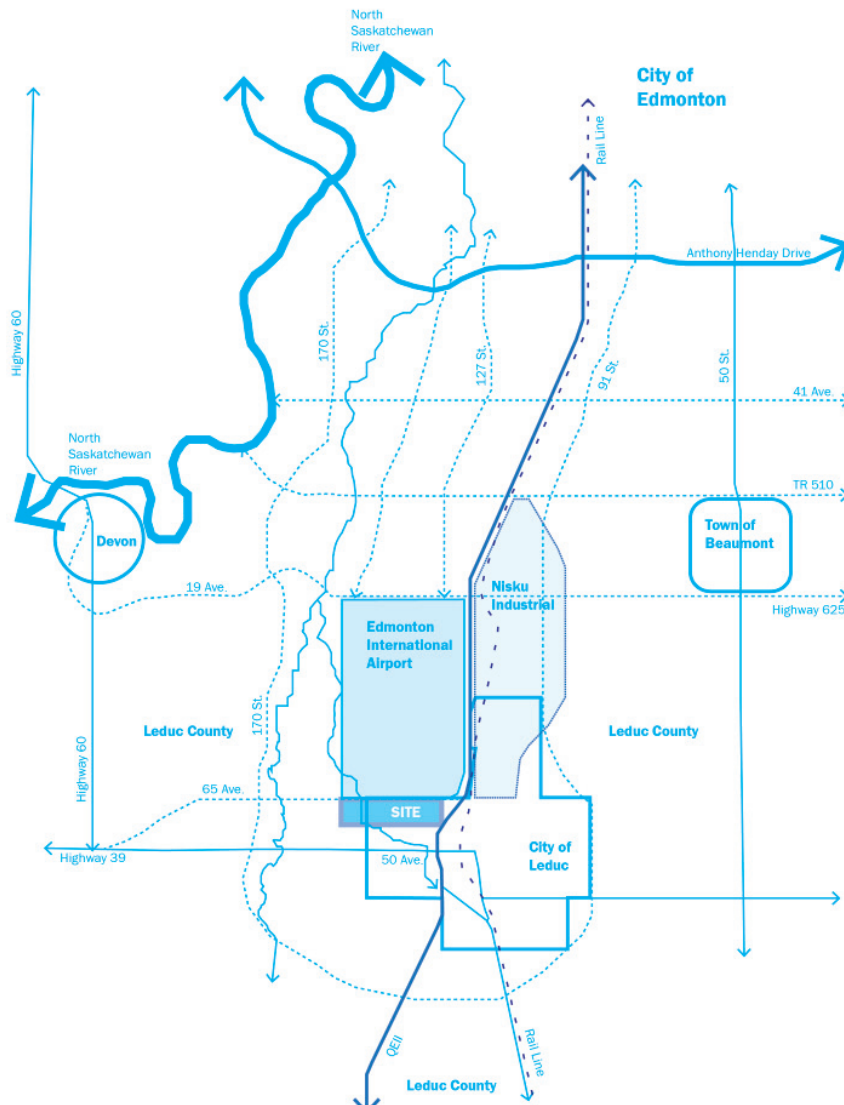
A common theme presented in this document is the need for intermunicipal collaboration and communication as an important factor for the regional development of an aerotropolis.

1.3. CITY OF LEDUC & THE AEROTROPOLIS

The aerotropolis project in the City of Leduc began in 2009. The unique approach utilized by the City included modelling air, traffic and ground noise around the airport and developing a policy plan called 'Aerotropolis Integrated Land-use Compatibility Plan (AILUCP)'. This is a 50-year document designed to protect the current and future development on lands abutting the Edmonton International Airport, as well as protecting the airport's present and future operational needs. This plan highlights the potential of the undeveloped area immediately south of the Edmonton International Airport to become one of North America's premier warehousing, distribution, and multi-modal hubs. The report also stresses that in addition to offering long-term economic growth, the future development should also provide for local community needs by supplying sufficient land for commercial, recreational and office space.

1.4. SITE CONTEXT

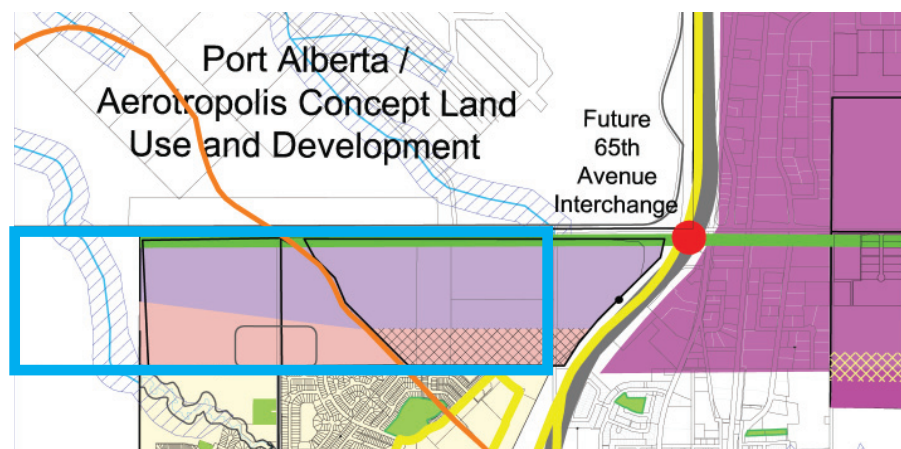
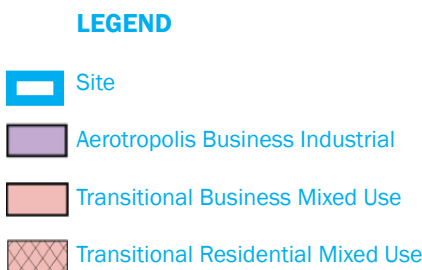
Although an aerotropolis concept applies to a broader area on all sides surrounding the airport, approximately 640 acres of undeveloped land is currently available for future development and is located immediately south of the Edmonton International Airport and west of Queen Elizabeth II Highway. The site can also be accessed via local road networks from existing low density residential neighbourhoods such as Bridgepoint and Deer Valley. It is located within the existing City boundary and is privately owned.



1.5. STATUTORY CONTEXT

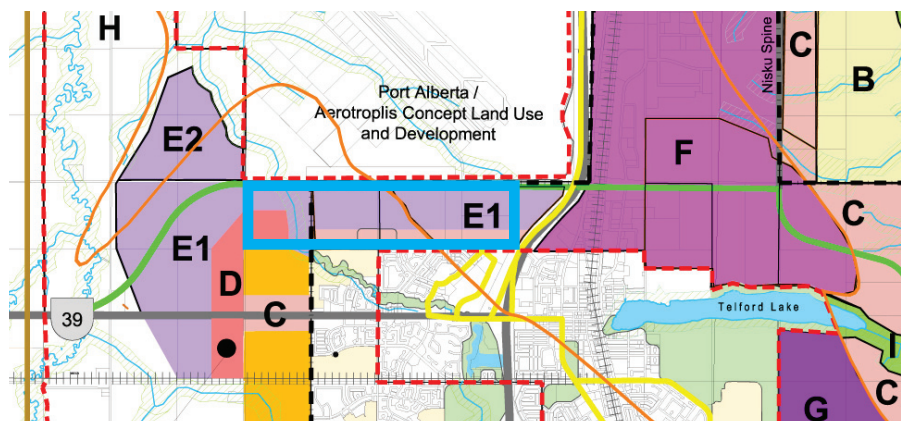
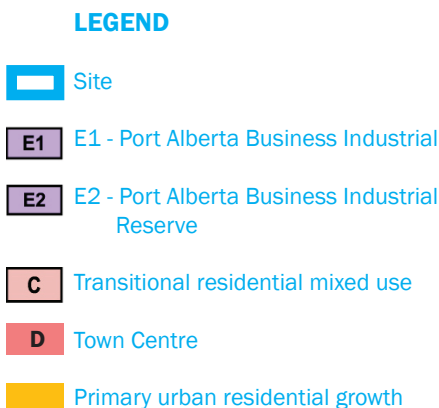
CITY OF LEDUC MUNICIPAL DEVELOPMENT PLAN (MDP)

City of Leduc’s Municipal Development Plan (MDP) designates the subject site as predominantly ‘Aerotropolis Business Industrial’ development with transitional residential and business mixed uses along the southern portion of the site adjacent to existing low density residential neighbourhoods as shown in the following diagram. In addition, a variety of commercial development policies support development of industrial and business parks on subject sites with focus on a wide range of uses such as industrial, logistics, warehouse, distribution, eco-industrial, agri/food-business and high-quality office park. The MDP policies provide a strong framework for future development of this site as one of North America’s leading aerotropolis projects.



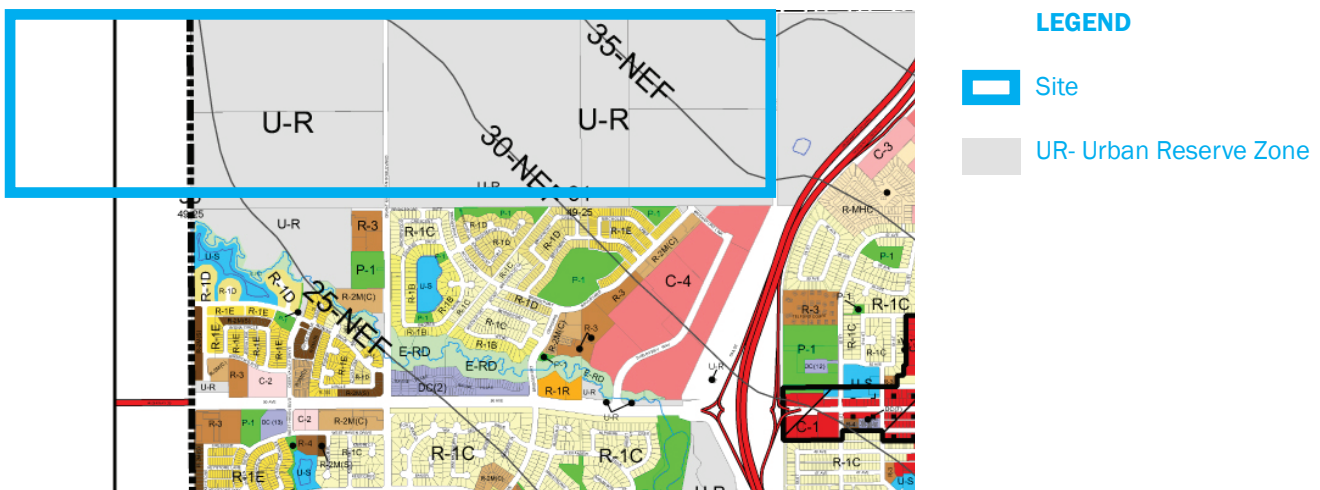
CITY OF LEDUC AND LEDUC COUNTY INTERMUNICIPAL DEVELOPMENT PLAN

The City of Leduc and Leduc County Intermunicipal Development Plan is consistent with the City of Leduc Municipal Development Plan and designates a predominant portion of the subject site as E1- Port Alberta Business Industrial policy area. This policy area provides a framework for future business industrial developments consistent with the future vision for Port Alberta. The southern portion of the site is designated for transitional residential uses.



CITY OF LEDUC USE BYLAW

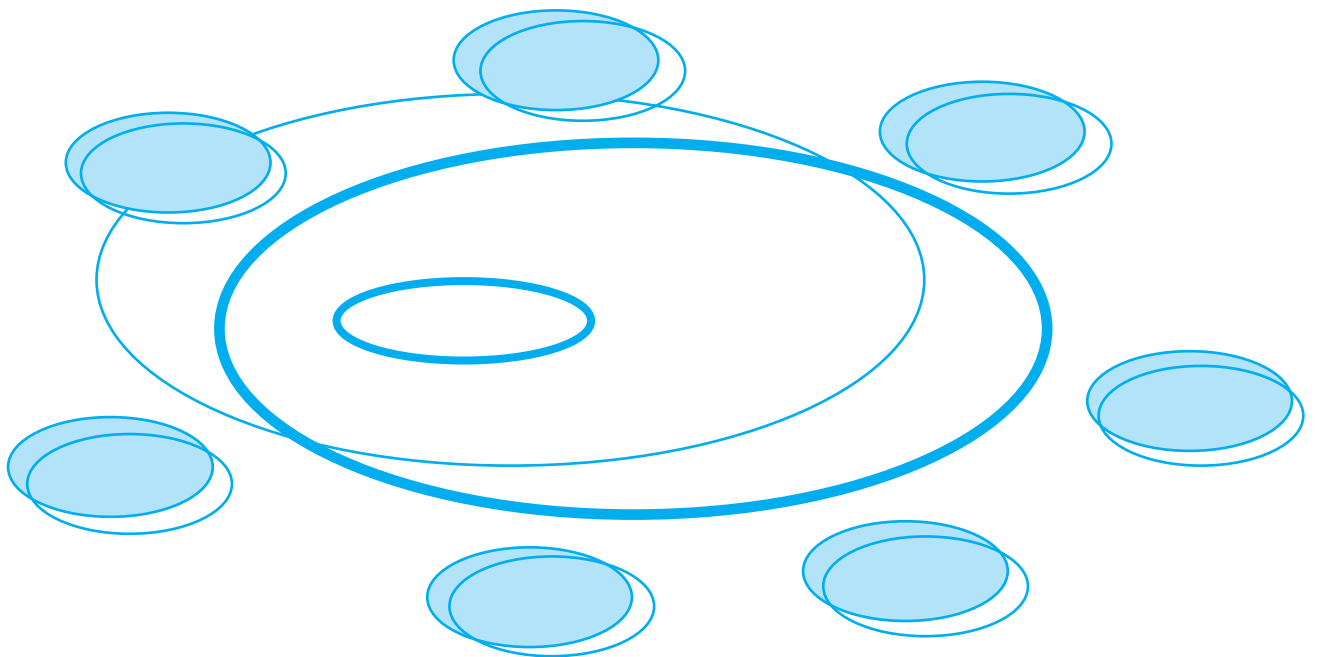
The City of Leduc Land Use Bylaw has designated subject land as Urban Reserve (UR) district. The purpose of Urban Reserve district is to restrict future land uses that may negatively impact future urban development on the subject site. Amendment of the existing Land Use Bylaw will be necessary to rezone subject lands from Urban Reserve (UR) to variety of industrial, residential and institutional land use districts identified in the existing Land Use Bylaw.



1.6. SITE CHARACTERISTICS



- SITE AREA**
640 acres
(Approximately 3 quarter sections)
- TOPOGRAPHY**
Flat
- OWNERSHIP**
Private



2. DESIGN CHARRETTE

CHARRETTE FORMAT

The design charrette, held on October 19 2012 with over 30 attendees, was established to strategize how best to utilize land and integrate economic activities south of the Edmonton International Airport. Groups represented included: Alberta Transportation, Edmonton International Airport, Edmonton Regional Airports Authority, Port Alberta, Melcor Developments etc. The presence of diverse stakeholders ensured a comprehensive dialogue and a creative exercise for establishing future vision for the site.

The format of the day began with a keynote presentation from airport transportation planning expert Prof. Douglas Baker from Queensland University of Technology, Brisbane, Australia. The participants were divided into 5 separate groups. The charrette exercise was divided into two parts. In the first part, each table discussed ongoing initiatives within the area and their values for potential development. This exercise was helpful in establishing trust and breaking down communication barriers. It also established a strong foundation for the design exercise. In the second part, all groups were tasked in visually describing, sketching and mapping future land uses, infrastructure, economic activities and housing. After more than an hour of designing, the groups presented their concepts to the others with time for questions and discussion. There was visible unity in the designs, programmes, and needs as well as a sense of development cohesion among the group; participants agreed upon the majority of requirements that were needed to make this area a successful future aerropolis.

2.1. DESIGN CHARRETTE

ONGOING INITIATIVES

The following is a summary of a number of ongoing initiatives that may affect the future development of the subject site. These initiatives were identified by participants in the first part of the design charrette :

- Edmonton International Airport plans for expansion
- Development of a new runway
- Land development in the South part of airport lands
- The City of Leduc’s Master Transportation Plan
- EDA partnerships with stakeholders such as Port Alberta
- Leduc County’s Municipal Development Plan that is set to be aligned with regional initiatives
- The extension of 170th street to Queen Elizabeth II Highway
- The Functional Planning Study for 65th Avenue which is ongoing collaboration with the Government of Alberta
- The City of Leduc plans to develop a large recreation centre just southwest of the subject site. The timeframe for this project is unknown.



Participants from Group 1



Presentation from Group 3



Presentation from Group 4



Participants listening to presentations

THE COMMON VALUES AND PRINCIPLES

The following is a summary of common values and principles identified by the charrette participants.

Collaboration amongst stakeholder groups in the land use planning process is necessary. Formation of public-private partnerships is critical for successful implementation of future vision.

Sustainable development practices should be embraced in the development of future site design, architecture, open spaces, movement patterns and overall infrastructure delivery.

Transition between existing land uses and future land uses should be addressed to minimise negative impacts

Supporting the activities of the Edmonton International Airport as an important transportation and economic hub in the regional and world markets is essential.

The maintenance of **Quality of life** in the City of Leduc is equally important to ensure that the aerotropolis businesses add value to surrounding communities.

CONSTRAINTS

A number of development constraints within the subject site were identified by the charrette participants. These constraints are presented below under five key themes.

Environmental constraints

Environmental constraints included wildlife mitigation for areas close to the Edmonton International Airport and the presence of a water body – Deer Creek - which has the potential to pose a development constraint, as well as an opportunity in some cases.

Transportation

Access routes to the landsite and the Edmonton International Airport are at capacity and cannot accommodate any further growth. This provides a challenge for servicing future commercial, industrial and residential developments in the area and has resulted in roads such as Grant MacEwan roads being used for heavy through traffic despite the presence of residential development to the south of the subject site. Measures for adaptation of transportation infrastructure include building an overpass on 65 Avenue.

Existing developments

Developments that are already present or underway are diverse but all have various implications to the development of airport related activities by the City of Leduc. The existence of residential neighborhoods just south of the landsite in question has implications for the types of future developments on the landsite, particularly with respect to all forms of industrial pollution. Alberta Products has a pipeline that runs through the landsite subject for development. This has to be taken into consideration as it is not possible to build over it.

Service Infrastructure

Large scale storm water management facilities that attract waterfowl are not permitted within 3km of the Edmonton International Airport. Various mitigation tools to this end include the use of a dry pond, draining the storm water pond within 48 hours, reducing heavy vegetation and restricting outdoor garbage management zones. In addition a new trunk for waste water management has to be put in place with the new community that is going to be developed.

Government collaboration and communication

Intermunicipal collaboration and communication is important for regional development. Participants were not satisfied with the levels of communication and commitment to the project by a number of key groups including Federal and Government agencies. The perception is that these key groups fail to recognize the importance of the Edmonton International Airport and related developments to not only the regional economy but that of the country as a whole.



Participants engaged in groupwork



Group discussions

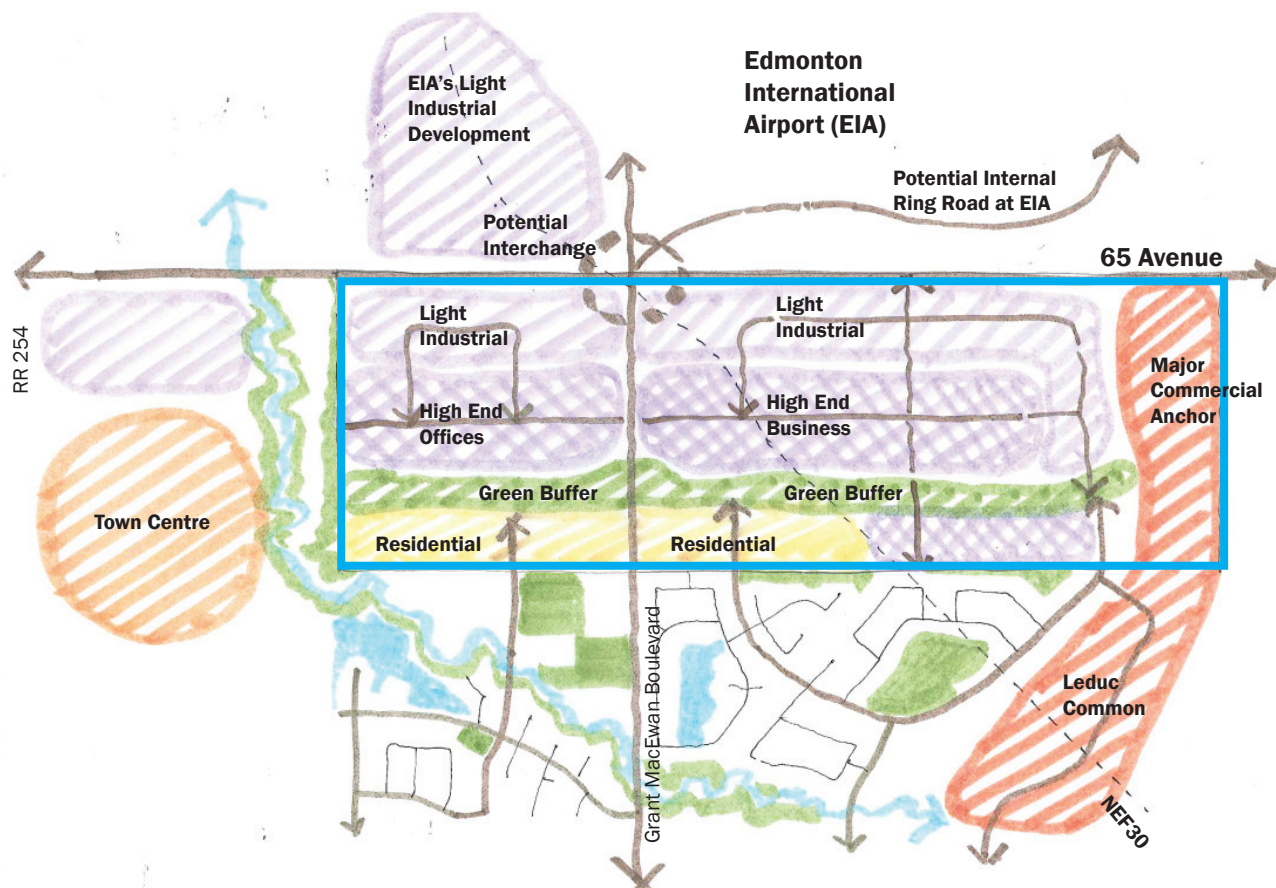


Participants listening to presentations



Presentation from Group 2

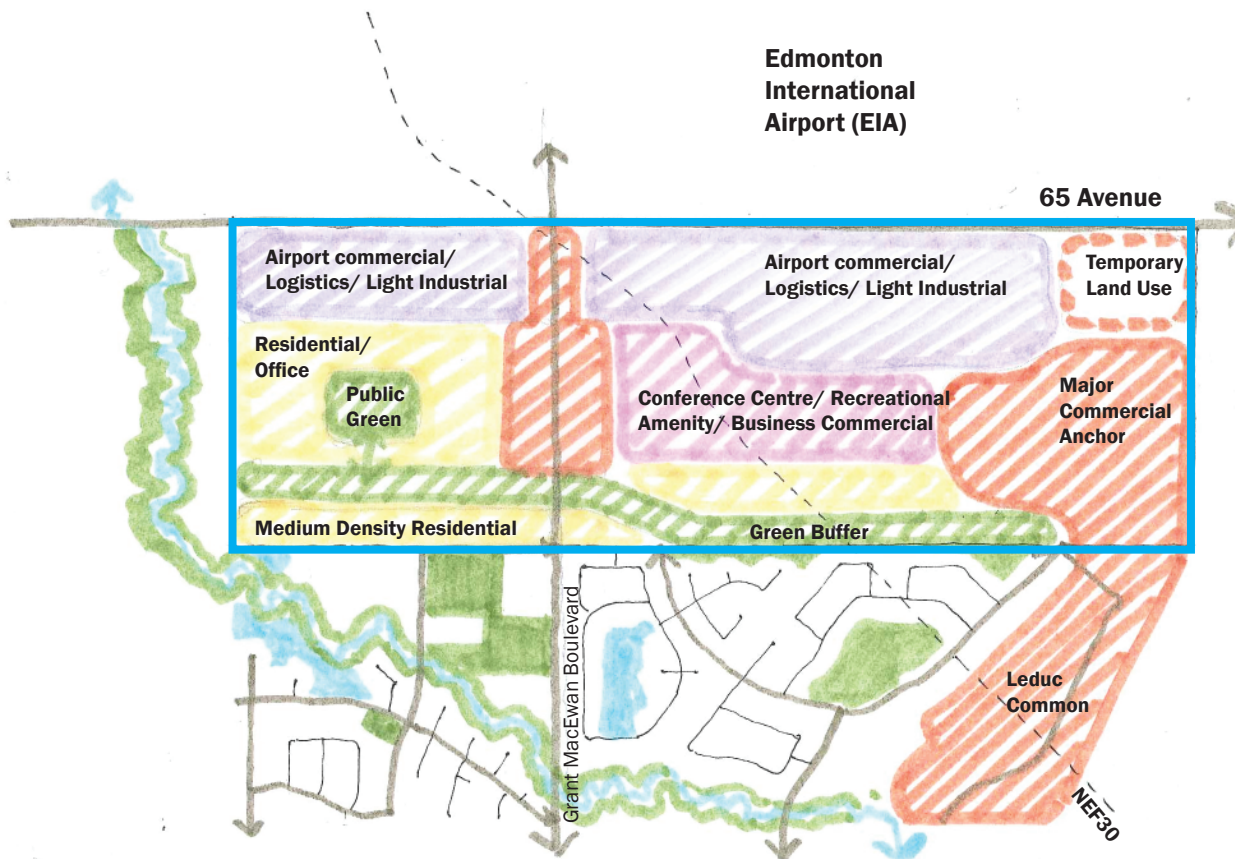
GROUP 1



KEY HIGHLIGHTS

- Expand Leduc Common to the north with additional large format commercial land uses.
- Develop medium density residential areas at the south boundary of the site outside NEF 30 noise contour line.
- Improve connectivity by extending existing roadway network into the new development.
- Develop an east-west green corridor to act as buffer between residential and non-residential uses.
- Develop this area as high end light industrial/business commercial destination.
- Build an interchange at future extension Grant MacEwan Boulevard and 65th Avenue.
- Develop status quo light industrial land uses along south frontage of 65th Avenue to complement developments within the airport lands.

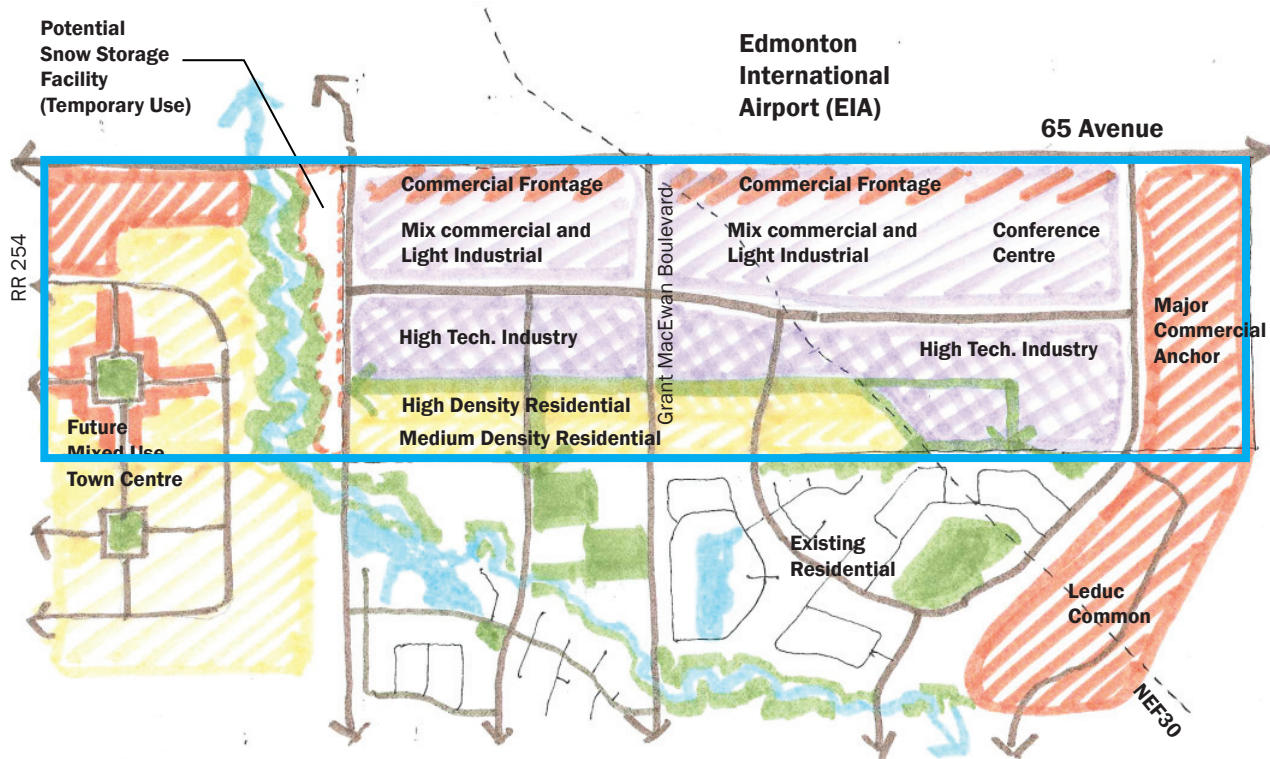
GROUP 2



Key Highlights

- Expand Leduc Common to the north and north-west with additional large format commercial land uses.
- Develop medium density residential areas at the south boundary of the site outside NEF 30 noise contour line.
- Develop an east-west green corridor to act as buffer between residential and non-residential uses.
- Develop airport related highway commercial, light industrial uses along south side of 65th Avenue.
- Develop speciality conference centre, amenity areas and high end business complex as a major focal point.
- Develop other supporting amenities and services for the benefit of the regional as well as local population.
- Develop commercial frontage along major north-south roads.
- Allow temporary land uses at the intersection of Highway QEII and future extension of 65th Avenue.

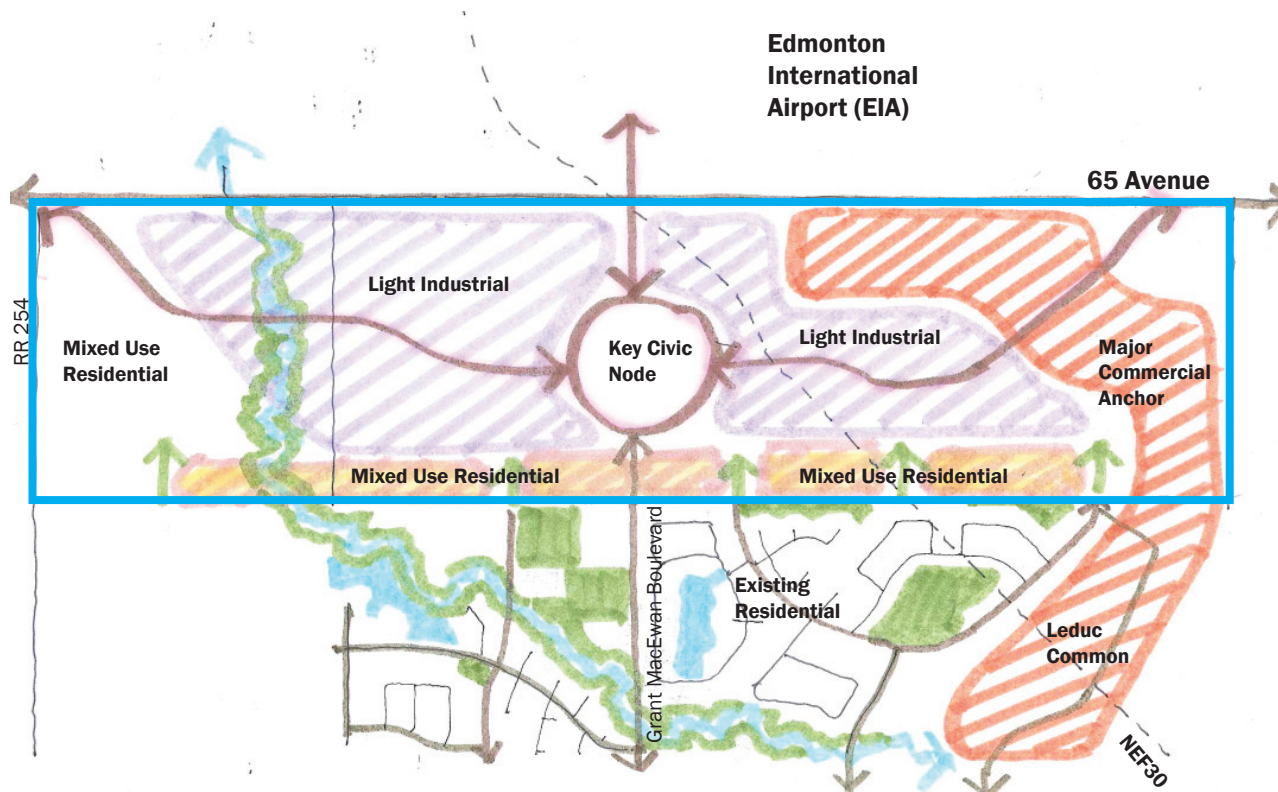
GROUP 3



KEY HIGHLIGHTS

- Expand Leduc Common to the north with additional large format commercial land uses.
- Develop medium density and high density residential areas at the south boundary of the site outside NEF 30 noise contour line.
- Develop an east-west green corridor to act as buffer between residential and non-residential uses.
- Develop this area as destination for high tech industries.
- Develop light industrial/commercial land uses towards 65th Avenue. Develop commercial frontage along 65th Avenue.
- Develop a temporary snow storage facility adjacent to Deer Creek.
- Develop mixed use Town Centre on the west side of Deer Creek.

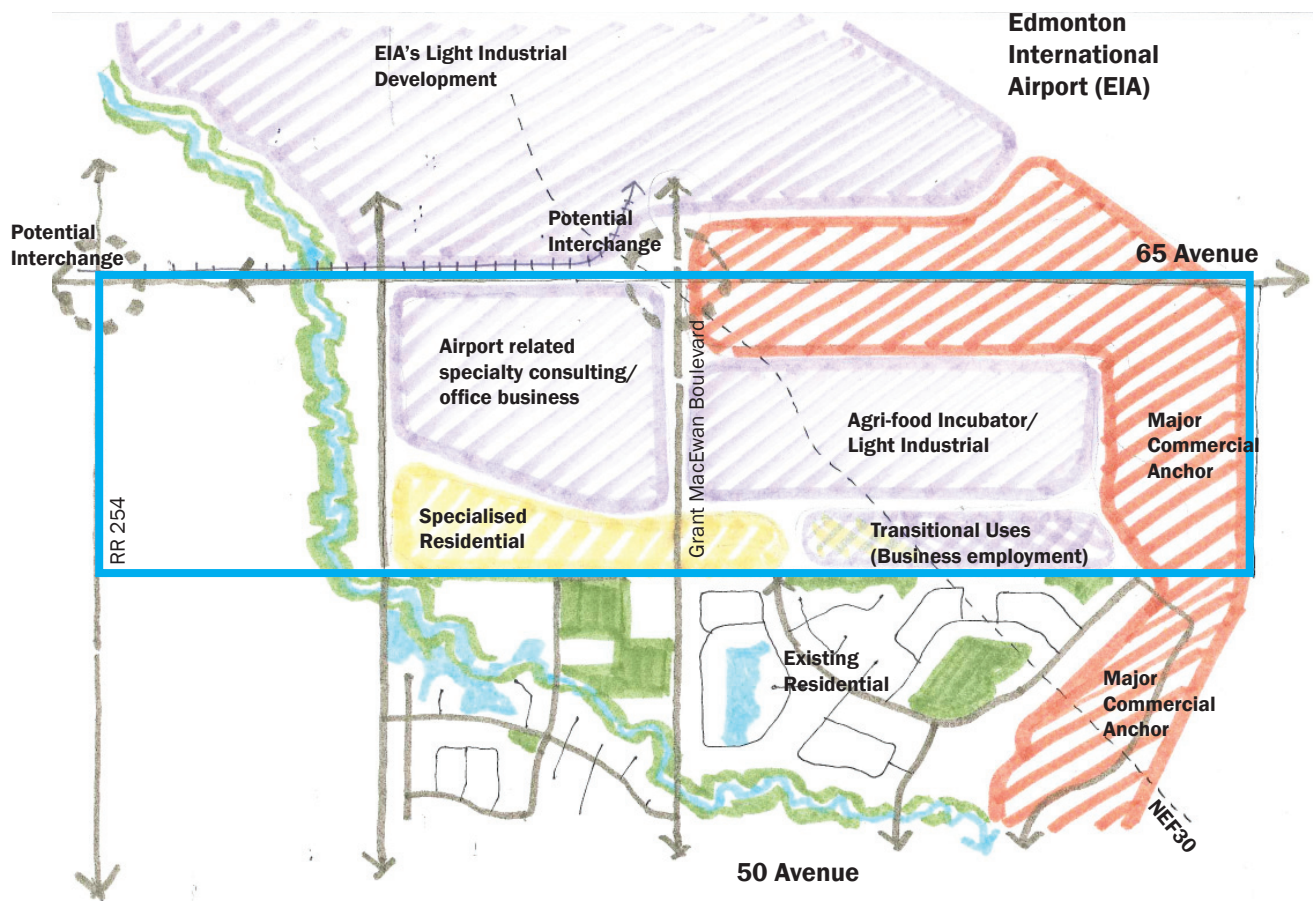
GROUP 4



KEY HIGHLIGHTS

- Develop a key civic node at a central location at the intersection of major internal streets.
- Expand Leduc Common to the north and north-west with additional large format commercial land uses.
- Develop mixed use medium density residential/commercial areas at the south boundary of the site.
- Develop this area as light industrial/business commercial destination.
- Improve an east-west roadway connections within the subject site.

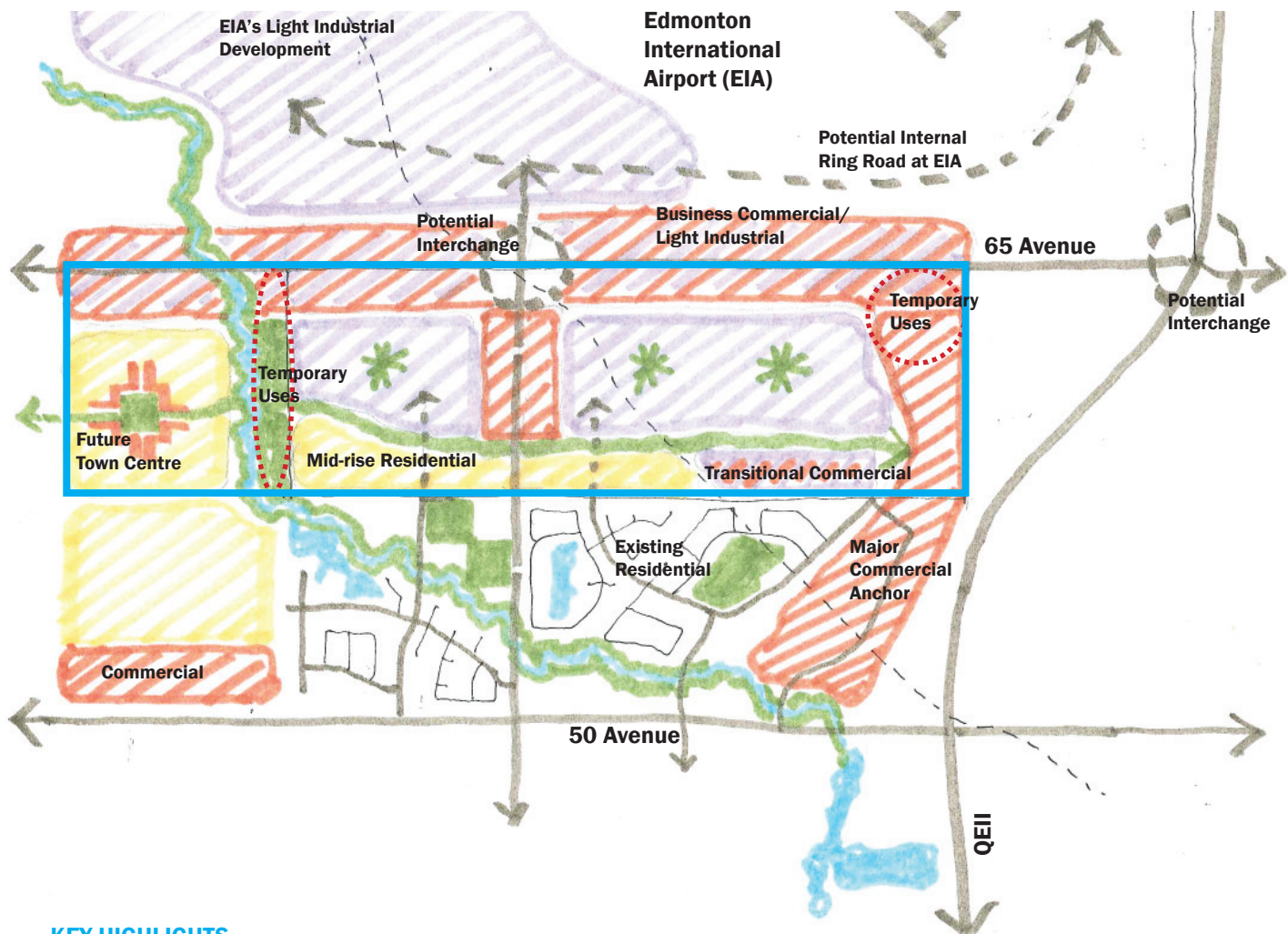
GROUP 5



KEY HIGHLIGHTS

- Expand Leduc Common to the north with additional large format commercial land uses.
- Develop specialized residential area along the southwest boundary of the site.
- Develop high end business park with focus on Agri-food industry, research incubators and other high end light industrial uses.
- Ensure that new light industrial and business commercial development is well-integrated with the industrial development within the Edmonton International Airport lands.
- Develop business commercial along both sides of future extension of 65th Avenue.
- Build two interchanges at the intersection of Grant MacEwan Boulevard, Range Road 254 and future extension of 65th Avenue.

2.2. COMMON THEMES



KEY HIGHLIGHTS

- Expand Leduc Common to the north with additional large format commercial land uses.
- Develop medium density residential areas at the south boundary of the site outside the NEF 30 noise contour line.
- Improve connectivity by extending existing roadway network into the new development.
- Develop an east-west green corridor to act as buffer between residential and non-residential uses.
- Develop this area as high end light industrial/business commercial destination.
- Build interchange at future extension of Grant MacEwan Boulevard and 65th Avenue.
- Develop status quo light industrial land uses along south frontage of 65th Avenue to complement developments within the airport lands.

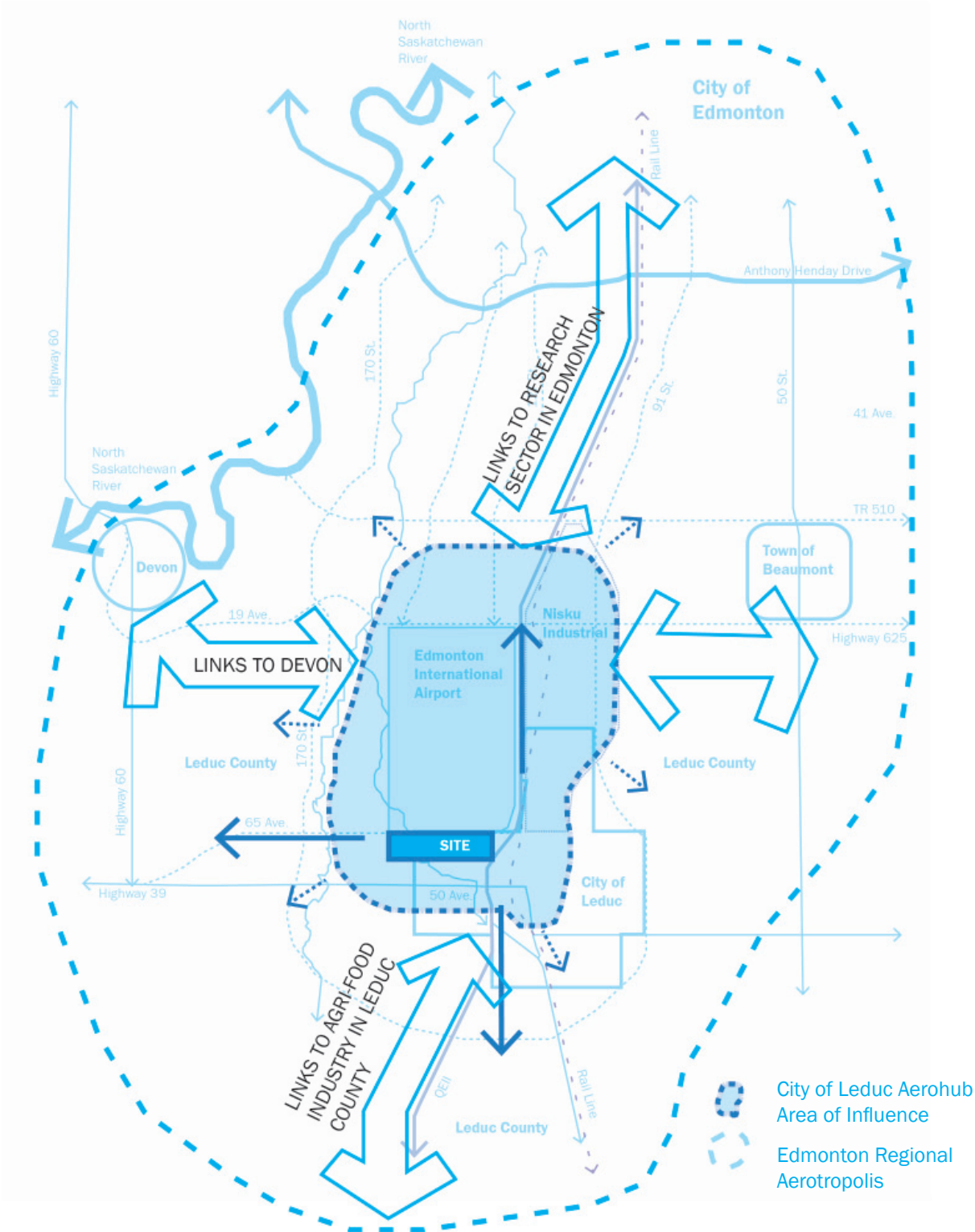
2.3. FUTURE VISION

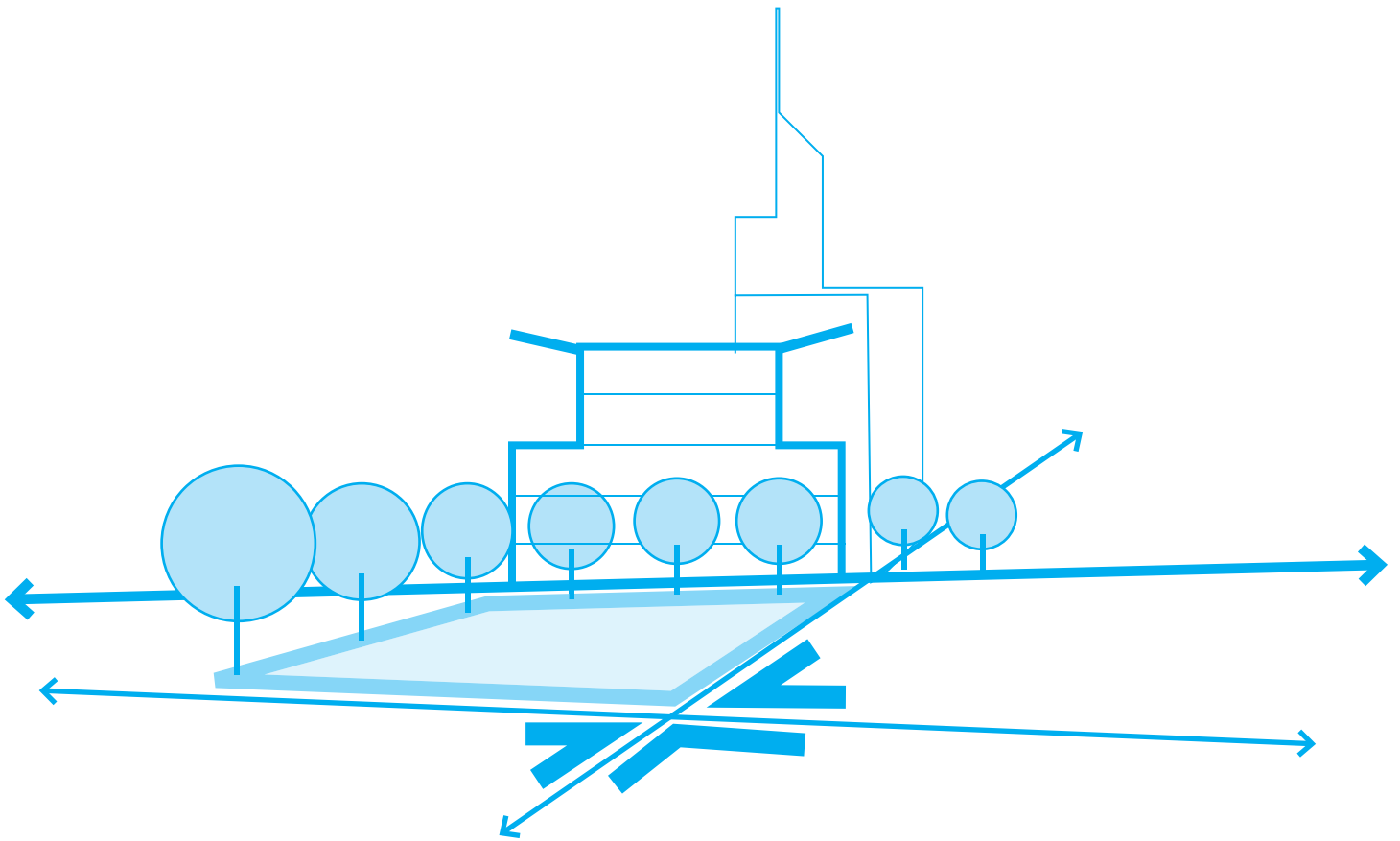


Preferred future vision for the City of Leduc Aerohub Core site may be summarized as follows:

- Establish and brand the subject site as a “core area” of the future aerotropolis with focus on research, technology and agri-food industry.
- Develop a distinct civic focal point with public institutions and related amenities for local as well as regional population.
- Build on existing assets such as the airport and key transportation corridors
- Respect surrounding context.
- Ensure that new development is well-integrated with the future development on airport lands.
- Develop a mixed use community with residential land uses adjacent to existing residential areas.
- Put special emphasis on walkability, green corridors and high quality public realm.
- Develop this area as a true “meeting place” for residents, businesses and travelling population.

2.4. RELATIONSHIPS BETWEEN FUTURE VISION FOR THE SITE AND THE REGIONAL CONTEXT





3. DESIGN GUIDELINES

In order to implement the vision established from the design charrette, the following design guidelines were developed. These design guidelines will provide reference to future developers when submitting their proposals for the Area Structure Plan, rezoning as well as subdivision and development permit applications. In order to provide comprehensive guidance for expected quality future developments, the design guidelines section is divided into the following five sub-categories:

LAND USE

Provide guidance for preferred future land uses and supporting facilities.

BUILT FORM

Provide guidance for preferred character of future buildings.

OPEN SPACES AND PUBLIC REALM

Provide guidance for preferred character of future open spaces, green connections and public spaces in order to establish a strong sense of place.

MOVEMENT

Provide guidance for future roadway connections, transportation and public realm improvements within the subject site and in the surrounding areas to ensure ease of accessibility.

SUSTAINABILITY

Establish minimum expectations for sustainable development practices for future projects to be located within the core of this aerropolis.

3.1. LAND USE

3.1.1.

Provide an appropriate transition and separation from existing residential areas to future non-residential areas through use of buffers and transitional land uses.

Such buffers and transitional land uses may include:

- Green corridors and open spaces
- Medium density residential
- Mixed use commercial/business employment

3.1.2.

Ensure that proposed land uses are well integrated with the airport lands.

- Any development along south side of future 65th Avenue should complement land uses within the airport lands.
- Any new development within the subject site should demonstrate how each phase contributes towards fulfillment of the long term vision for this area.

3.1.3.

Attract key institutional anchors of regional importance to serve regional as well as local population and act as a civic focal point.

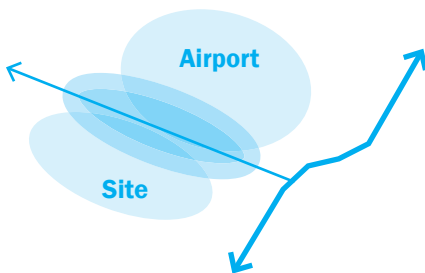
The viability of following land uses should be explored:

- Conference Centre
- Satellite campus for post secondary schools and universities such as University of Alberta (U of A), Northern Alberta Institute of Technology (NAIT) etc.

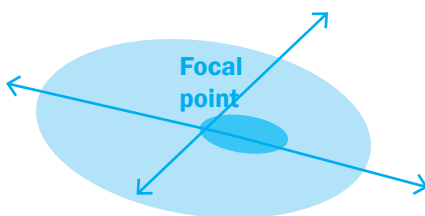
Transition



Integration with airport



Civic focal point



Iconic architecture



High end office complex in campus setting



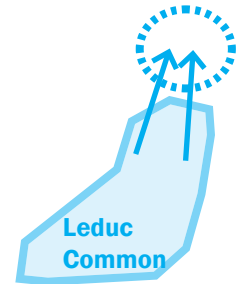
Civic focal point

3.1.4.

Build on existing commercial anchor such as the Leduc Common and develop a contiguous urban fabric.

- Big box commercial anchors should be considered appropriate on land located immediately north of the Leduc Common along QEII corridor.

Build on existing assets

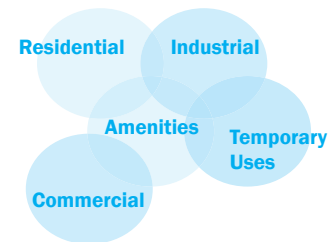


3.1.5.

Encourage appropriate mix of light industrial, business employment, public amenity, residential and institutional land uses to achieve unique branding for this area as a regional 'meeting place' in close proximity to the airport.

- Future land use distribution should respect the 'land use concept' and ensure that they contribute positively towards establishing a sense of place.
 - Temporary land uses such as snow collection facility, which may not negatively impact long term vision may be considered appropriate.

Land use mix

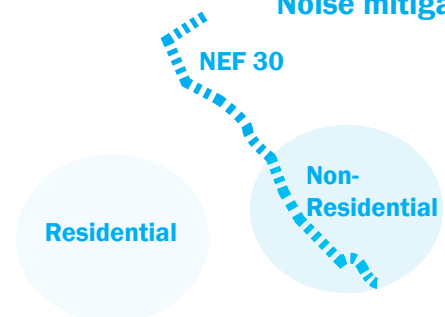


3.1.6.

Ensure that residential developments are not allowed within NEF 30 contour line to avoid negative impacts from higher noise levels.

A variety of light industrial, commercial and institutional land uses could be considered appropriate with in NEF 30 contour line.

Noise mitigation



High end light industrial buildings



Connections to surrounding communities

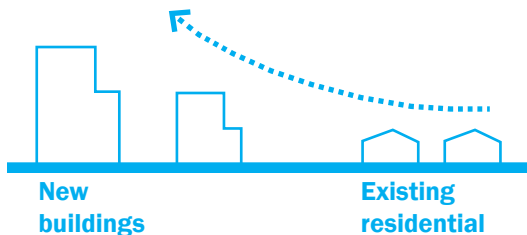


Commercial anchor

3.2. BUILT FORM

3.2.1.

Transition



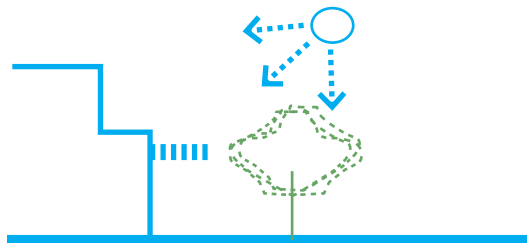
New built form along south edge of the subject property should provide appropriate transition from existing low rise residential buildings located along south side of the subject property.

Appropriate building typologies may include:

- Row housing
- Mixed use low rise or mid rise apartments
- Low rise commercial/office buildings

3.2.2.

Energy efficient architecture

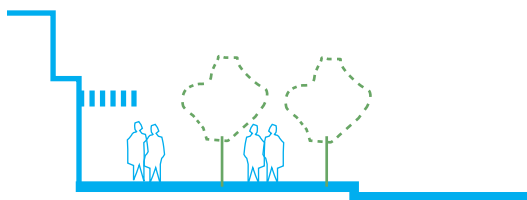


New buildings should be encouraged to incorporate innovative architectural designs, energy efficient materials, and winter friendly design elements.

- Key landmark projects should be encouraged to attain Leadership in Energy and Environmental Design (LEED) certification.
- New buildings should be encouraged to incorporate design elements to maximise solar gain. Other public realm elements such as outdoor heating areas should also be encouraged.

3.2.3.

Pedestrian friendly design



Site and building design of new projects should positively contribute towards creation of a pedestrian friendly public realm.

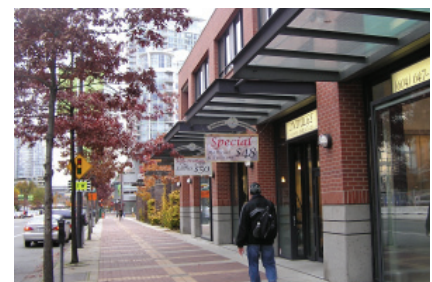
- Buildings should provide special architectural treatment for their facades fronting major public streets and at corner locations.
- Blank walls should be avoided.
- Buildings should frame the public street and provide continuous active building frontage.
- Transparency at the ground level should be encouraged.



Energy efficient institutional buildings



Mixed use mid-rise buildings



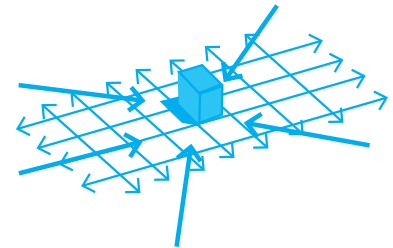
Pedestrian friendly built form with active frontages

3.2.4.

New buildings and land uses should play a key role in establishing a unique focal point within the ‘Leduc Crossroads Aerotropolis’ comprising of surrounding lands including the Nisku Industrial Area.

Core

- Special emphasis should be placed on establishing a wide hierarchy of landmark buildings.
- At least one distinguishable landmark building should be developed at the focal point in conjunction with the associated amenity area and open spaces.



3.2.5.

Emphasis should be put towards developing a family friendly community with a wide range of housing types and related amenities that may suit the needs of all ages.

Family friendly community

- A variety of public amenities including small parks, green corridors and institutions such as day cares, religious facilities, cultural institutions and educational/research facilities should be encouraged.

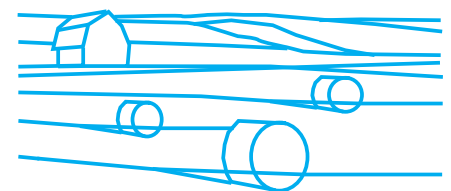


3.2.6.

Where possible, architecture and landscape design should reflect prairie landscapes and cultural elements to establish a strong sense of place.

Respect local context

- Use of local species should be encouraged in landscape design.
- Use of bright colours should be encouraged.



Family oriented amenities



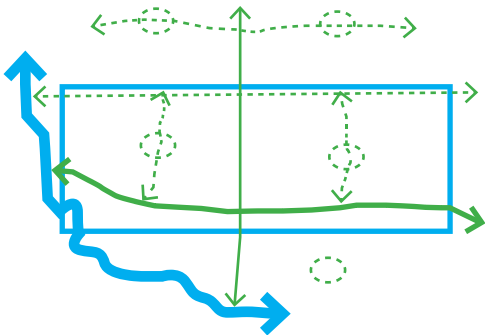
Conference centre



Public institutional building as a key focal point

3.3. OPEN SPACES AND PUBLIC REALM

Continuous network

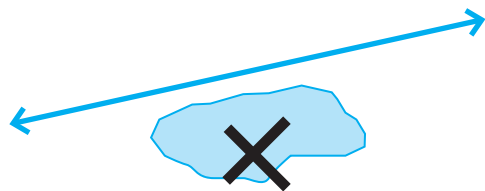


3.3.1.

The potential open space structure should provide a continuous network of open spaces, multiuse trails and pedestrian pathways to connect the subject site with surrounding natural and man-made open spaces.

- Pedestrian connections should be improved to Harry Bienert Park and Deer Valley Park to south, Deer Valley Creek to west and Edmonton International Airport to north.
- A minimum of 10% developable land should be dedicated as Municipal Reserve and should provide linkages to open spaces in surrounding communities.

Minimise water bodies

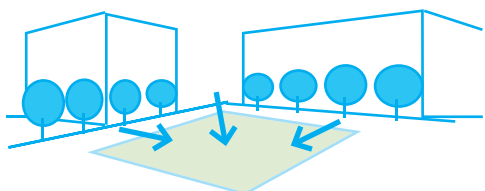


3.3.2.

The design of open spaces should avoid use of water bodies or planting that may attract birds to the area.

- Storm water management facilities should be discouraged.
- A combination of hard and soft landscaping elements should be encouraged. Use of large water bodies should be discouraged.

Relationship between open space and buildings



3.3.3.

Where possible, new open spaces, plazas and green areas should be strategically located along key public streets and adjacent to major landmark buildings.

- Small plazas and parks should be flanked by active building frontages to ensure continuous surveillance.
- Where possible, design of open spaces should be integrated with the site design of adjacent buildings.
- A civic focal point should be developed to establish a symbolic centre of the aerotropolis.



Winter friendly public realm with trees and special canopies



Wider sidewalks and use of public art



Public art

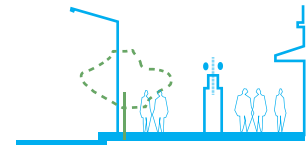
3.3.4.

New public realm elements including lighting, street furniture and landscaping elements should incorporate themes that may emphasize history of the area.

Some of the key themes may include:

- History of oil exploration in Leduc
- Development of Edmonton International Airport
- Crossroads Aerotropolis at Leduc

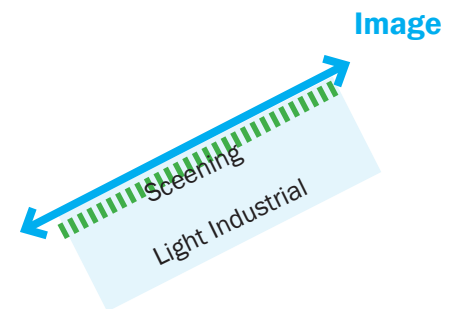
Public realm to reflect local themes



3.3.5.

Light industrial land uses, which may require significant outdoor storage should be located away from major roadways or should be required to provide appropriate visual screening.

- Commercial/business employment uses should be encouraged along major roadways.
- Landscaping measures such as berms, trees and fencing should be encouraged along major roadway corridors.

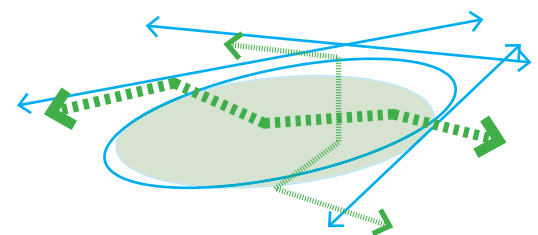


3.3.6.

Location and design of open spaces should be flexible, accomodative and transformative. In addition, effective programing of each open space should ensure that they provide year round public engagement.

- Open spaces and green corridors should be used as green buffers between residential and non-residential areas.

Flexible and transformative



Theme based public realm



Pedestrian focussed streets

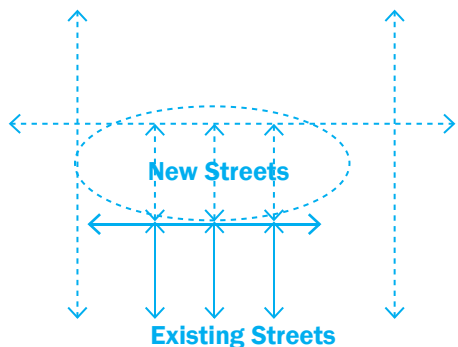


Small scape open spaces effectively enclosed by appropriate built form

3.4. MOVEMENT AND INFRASTRUCTURE

3.4.1.

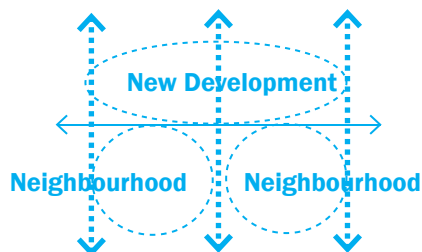
Improve connectivity



New roadway network should improve connectivity of this focal point within the future aerotropolis to Edmonton International Airport, industrial areas and surrounding urban municipalities

- Where possible, existing roadways should be extended into the new development to improve vehicular and pedestrian connections.
- Future roadway network and access points should complement internal roadway network within the airport lands.
- A secondary transportation network of east-west roadways should be encouraged to enhance transportation of goods and people to and from the area.

Minimize traffic impacts on existing residential



3.4.2.

Future roadway network should be designed to minimize negative traffic impacts on the existing residential communities.

- The new development should be accessed mainly from future extension of 65th Avenue.
- Until future extension of 65th Avenue, other alternative access routes that may have minimum impact on existing residential areas should also be explored.

Improve transit connectivity



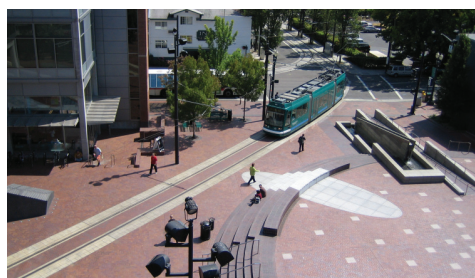
3.4.3.

New development should provide transit links to the airport and the surrounding residential areas.

- Viability of affordable bus transit or shuttle service should be explored from key future amenities, offices, work areas to the Edmonton International Airport and other key amenities in the City of Leduc.
- New development should take advantage of its proximity to existing rail network.



Maintain character of existing residential neighbourhoods



Integrated transit facilities and public spaces



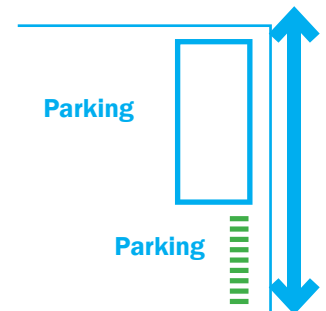
Incorporate bike lanes within public street right of way

3.4.4.

Surface parking areas should be minimised and screened from public streets

- Where possible, surface parking areas should be located behind buildings.
- Special landscaping and architectural elements should be used to screen surface parking areas from public streets.

Screen parking areas

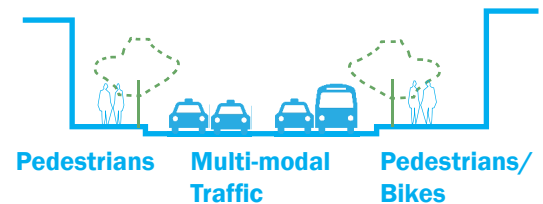


3.4.5.

New roadways should be designed to provide high quality public realm

- Wider sidewalks, trees, pedestrian lighting and special street furniture should be incorporated within the design of key public streets.
- Where appropriate, alternative modes of transportation including bikepaths and pedestrian walkways should be incorporated within the road right of way.

Complete streets

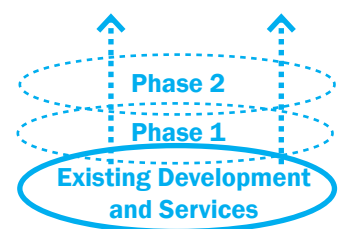


3.4.6.

Staging of new development should ensure cost effective extension of water, sewer infrastructure and shallow utilities. Sustainable infrastructure delivery and maintenance alternatives should be encouraged.

- In general the new development should pay for itself.
- All new development should be serviced by municipal infrastructure.
- Alternative methods such as district heating and cooling, solar heating and waste collection mechanisms should be encouraged.

Cost-effective servicing



Enhanced landscaping for surface parking areas



High quality streetscape design (Median, sidewalks and street furniture)



Complete streets with multi-modal transportation options

3.5. SUSTAINABILITY

Local Employment Base



3.5.1.

New development should play important role in establishing this area as an important local employment base within the region.

New businesses that may be encouraged in this area include:

- Agri-food industry
- High-end office complexes
- Local servicing industries

Affordability



3.5.2.

New development should provide affordable options for new businesses and housing.

- New housing should incorporate affordable housing types such as multi-family and mixed-use buildings.
- Rental housing should be promoted.
- Developers should be encouraged to provide certain percentage of total space at affordable rates for commercial and industrial uses.

Sustainable Mobility



3.5.3.

Special emphasis should be put on sustainable as well as affordable public transportation systems to connect this future focal point with surrounding industrial areas and urban communities.

- New development should take advantage of proximity to existing rail line.
- Viability of frequent bus connections to the Edmonton International Airport, City of Leduc's downtown area and key urban areas in the region should be explored.



Energy efficient architecture



Affordable housing



Transit supportive public realm

3.5.4.

Type, scale and nature of new businesses within this area should focus on specialised, high-tech industries and establish a unique branding for this portion of the aerotropolis.

- Warehousing sales and distribution type businesses will be allowed but should not be encouraged.
- Food and agriculture related businesses, nanotechnology, research and incubators and other similar businesses should be encouraged.

Sustainable Trade

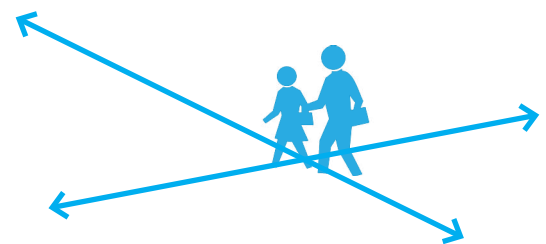


3.5.5.

Design of urban fabric, street layout and open spaces in new residential areas should encourage walkability within the broader aerotropolis.

- A combination of dedicated multi-use trails, wider sidewalks, bike paths and pedestrian pathways should be encouraged.
- Special emphasis should be given to improve connectivity with key landmarks and open spaces in the region.

Walkability

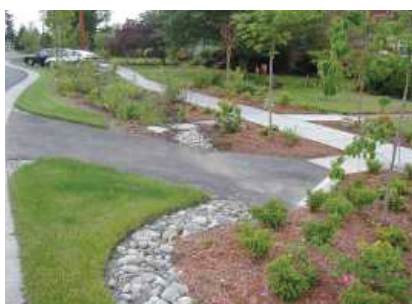
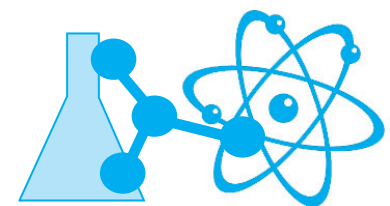


3.5.6.

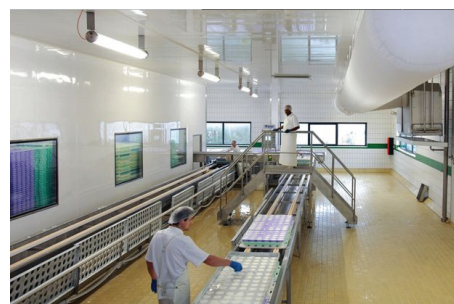
Special focus should be towards attracting research and development related industries to establish this area as a centre for innovation within the future aerotropolis.

- Potential partnerships between regional educational institutions and research/innovation related industries should be explored.
- Special incentives may be provided to attract such industries to this area.

Research and Development



Low-impact development

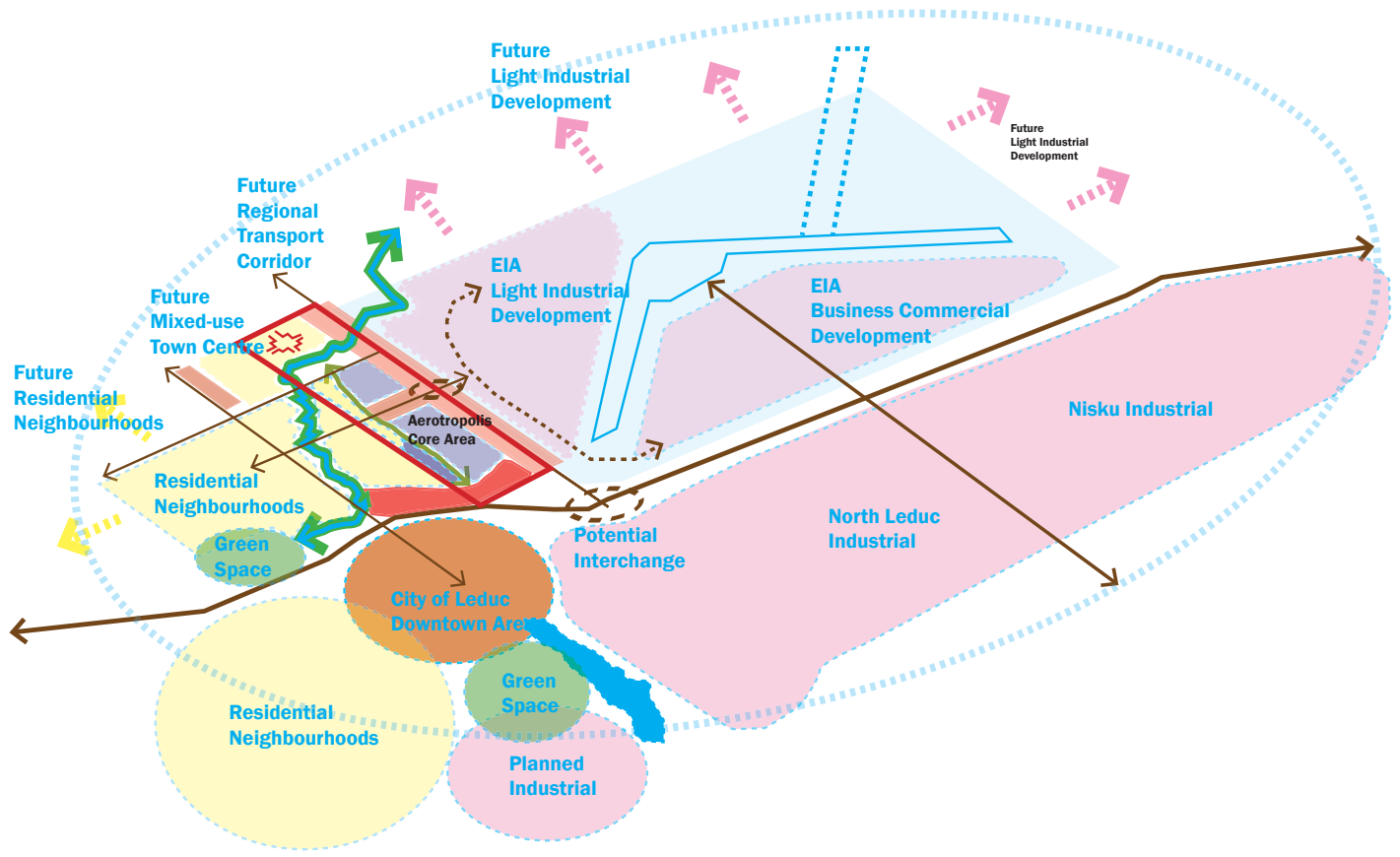


Agri-food Industry



Research and Technology Park

THE CITY OF LEDUC AEROHUB: FUTURE VISION



LEGEND

-  Core of future City of Leduc Aerohub
-  Specialized industries
-  Mixed use commercial corridor
-  Anchor commercial
-  EIA industrial
-  The Crossroads Aerotropolis area of influence

4. NEXT STEPS

Successful implementation of concepts and ideas established through the design charrette exercise and explained in this design guidelines document will require ongoing collaboration and partnerships between a variety of stakeholders including local municipality, provincial agencies, local development industry and business community.

Key steps necessary for successful implementation of this project are further explained in this section.

- **Accountability and leadership**
- **Establish a co-ordination group**
- **Establish a clear plan**
- **Explore Alternatives to the 65th Avenue Interchange**
- **Collaboration**
- **Build on Existing Opportunities**

4.0. NEXT STEPS

4.1. ACCOUNTABILITY AND LEADERSHIP



Dr. Baker providing concluding remarks

Dr. Baker provided a brief summary of the key concerns and asked for accountability and leadership from the different interest groups to ensure effective and coherent development. Through the decentralization of leadership, the quantity of discussions will increase as will accountability. Dr. Baker emphasized that the groups responsible for their tasks should have made significant progress by November 2013 for this project to continue momentum.

INFRASTRUCTURE

The Edmonton International Airport and the City of Leduc volunteered to take responsibility on leading talks with the provincial government regarding infrastructural development, specifically the 65th Ave interchange.

PLANNING

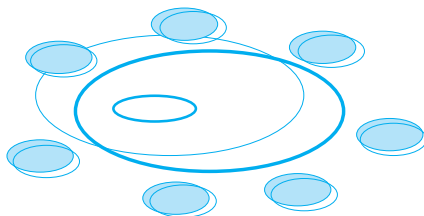
Since both Melcor Developments and Edmonton International Airport are two of the largest property stakeholders, they both will lead the planning procedures.

GOVERNANCE

The City of Leduc will lead the governance portion of these next steps as they are interconnected with the stakeholders and provincial government.

REGIONAL LOCAL ECONOMIC DEVELOPMENT

Both the City of Leduc and Port Alberta will spearhead the regional local economic development portion. Considering this is part of Port Alberta's mandate and the City of Leduc's, they both were a logical choice to connect business to the area.



4.2. ESTABLISH A COORDINATION GROUP

A Crossroads Aerotropolis coordination group involving all stakeholders would enhance the branding of the City of Leduc lands and increase the likelihood of complementary development. Leduc and the International Airport are at an East-West and North-South crossroads at which rail, air and highways intersect. There is an opportunity based on the intersection of local and regional with global air access. An international vision will be required.

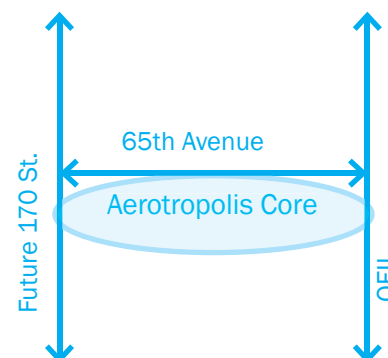
4.3. DEVELOP A CLEAR PLAN

A clear plan for the City of Leduc lands south of the airport would allow branding of development as a Crossroads Aerotropolis. This will allow the site and its affordances to be more easily understood by investors at a distance.

4.4. EXPLORE ALTERNATIVES TO 65TH AVENUE INTERCHANGE

The charette largely assumed that development of the existing 65th Avenue interchange with Highway 2 is a precondition for development of the site. However, even in the absence of this, access through the airport is still possible, especially if 65th Avenue was jointly developed with EIA as a commercial corridor rather than as an airport boundary that allows development only on the southern side of the road.

Access from a regional N-S artery proposed for 170 St. to the west also allows significant access to Edmonton, Devon and, in the future, to Highway 2.



4.5. COLLABORATION

Collaboration between the City of Leduc and the EIA is essential to develop the lands considered in this study:

- EIA proposals to develop southern airport lands commercially will be enhanced by transport connections on the southern edge of the airport.
- City of Leduc interest in developing a Crossroads Aerotropolis will be enhanced by complementing and integrating with development along the southern boundary of the airport.
- Regional interests including Town of Devon, Leduc County, Nisku Industrial Park, Port Alberta and the City of Edmonton will benefit from coordinated development.

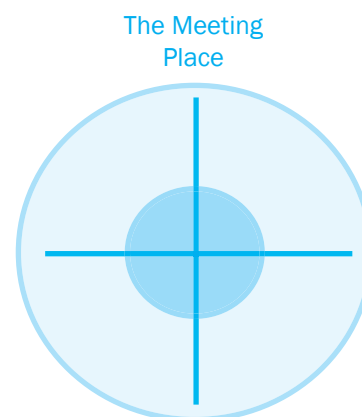
4.6. BUILD ON EXISTING OPPORTUNITIES

OPPORTUNITIES SHOULD BE EXAMINED IN INCLUDING:

- Sustainable and smart transportation and shipping
- Responding to changing demands
- Needs for renewal of infrastructure
- Walkable opportunities to live and work in close proximity
- Fly-in fly-out conference and meeting trade
- Corporate charter, oil sands services and aircraft maintenance industries

THESE OPPORTUNITIES MUST BE CONSIDERED IN THE CONTEXT OF:

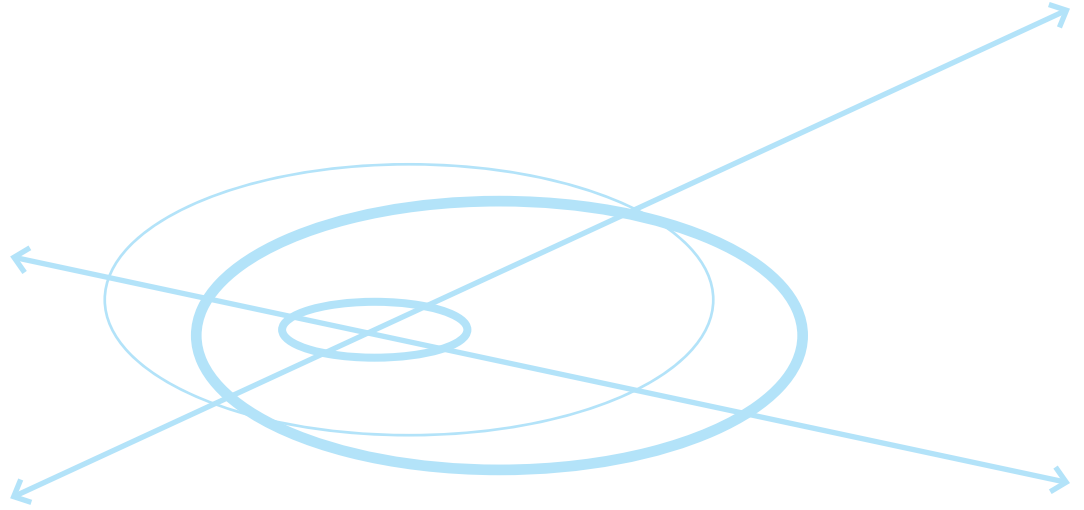
- Established niches served by Calgary-based facilities such as warehousing
- Distance and proximity of major markets
- Changing demands and air service to northern destinations



5. APPENDIX A

LIST OF CHARRETTE PARTICIPANTS

Sara Wong, Alberta Transportation
Daryl Procinsky, ONPA Architects
Ken Woitt, City of Leduc
Gail Scott, Executive Director, Leduc-Nisku EDA
Richard Horncastle, Business Development Manager, Leduc-Nisku EDA
Mike Pieters, City of Leduc
Des Mryglod Leduc County, Public Works & Engineering
Myron Keehn, Edmonton Airports
Tony Valente, Edmonton Airports
Bwale Bwalya, City of Edmonton (Urban Planning and Environment)
Brent Croucher, Invistec Consulting Ltd.
Nabeal Mansour, Media Masters Creative Communications Inc.
Stephanie Schulz, Leduc Regional Chamber of Commerce
Andre Banks, (On Behalf of Jason Fjeldheim) Melcor Developments Ltd.
Carol Wallace, (On behalf of Jason Fjeldheim) Melcor Developments Ltd.
Cory Labrecque, City of Leduc
Mayor Anita Fischer, Town of Devon
Wendy Cooper, President and CEO of Port Alberta
Paul Benedetto, Manager, City of Leduc



MAY 2013



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